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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/859,542	05/18/2001	Shiuh-Bin Kao	KAOS3005/EM/6793	3481

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EXAMINER	
YENKE, BRIAN P	
ART UNIT	**PAPER NUMBER**
2614	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/859,542	KAO ET AL.	
	Examiner	Art Unit	
	BRIAN P. YENKE	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment (23 Dec 04)*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1 and 3-7 have been considered but are not persuasive.

Applicant's Arguments

a) Regarding claim 1, applicant states that the claimed anti-compensation process is not based on relation between R, G and B but based on the gray level after the first stage of gamma correction.

Examiner's Response

a) The examiner disagrees that Matono's anti-compensation process is based upon the relation between the R, G and B components. Matono states that gamma correction is performed independently (col 5, line 36-44), and nowhere can the examiner find that Matono discloses that the anti-compensation is performed based on the relation between the R, G and B components.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2a. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matono et al, US 6,344,857 in view of Takayama, US 6,317,157.

In considering claim 1,

Matono discloses that a received video television is gamma corrected to correct the gamma characteristic of the image transmitting side (col 1, line 24-27) and simultaneously therewith correct the gamma characteristic of each display devices such as LCDs, PDPs or DMDs. Gamma correction unit 1 which divides the received video signal into 8 segments comprised of two nodes (Fig 2) based in the brightness/gray level of the video signal (col 3, line 25-64). The gamma correction unit performs a variety of gamma correction based on the particular segment of the divided video signal (Fig 2), where based upon the linear gamma curve (dashed line Fig 2), the respective colors red, green and blue, are adjusted where each segment includes a start point (low level) and an end point (high level), where the signal (color) is adjusted from the start point to the end point. It is also noted that the segments in Matono are non-linear with respect to every segment thus each slope having varied slopes (i.e. gamma coefficients). With respect to the *claimed wherein in said step c) a second gamma smaller than said first gamma is used in said anti compensation process with respect to said video signal in a range of low gray level for increasing said grey level in said range of low gray level* is met where the blue color, in the first seven segments is gamma corrected using a gamma value lower than the gamma curve (dashed line) which increases the gray level in each of the blue segments (Fig 2).

The applicant states that Matono discloses segmenting the video signal and performing anti-compensation to corresponding segments of the received video signal.

Matono does disclose that a signal must be gamma corrected for the image transmitting side and in addition gamma corrected for the type of display.

Although, the examiner maintains that Matono has identified that two gamma corrections are required, the examiner nonetheless incorporates Takayama, US 6,317,157 which discloses that gamma correction (Fig 1, 100) is required based upon the received signal (computer RGB) which is again gamma corrected (Fig 1, 102) based upon the type of display (CRT) (Fig 1).

Thus the examiner maintains that the performance of two gamma corrections on a signal (based upon the type of signal received, where the transmitting side gamma compensates a signal (i.e. NTSC is compensated using 1/(2.2) gamma value) and a additional gamma correction (based on the type of display utilized) is required, when a system either receives a conventional signal (i.e. NTSC, gamma on transmitting side is 1/(2.2)) and displays it on a display other than a CRT, or receives a non-NTSC signal (i.e. computer) and displays it on a non-computer (i.e. CRT) display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Matono which discloses segmenting a received signal and performing anti-compensation gamma correction in order to properly display the signal onto a display (i.e. LCD, PDP or DMD) with Takayama, by recognizing that based upon the type of signal received (i.e. a signal which has a gamma coefficient different than the displays) an initial gamma compensation must be performed to eliminate the gamma compensation performed on the transmitting side.

In considering claim 3,

The claimed wherein said step c) a third gamma larger than said first gamma is used in said anti compensation process with respect to said video signal in a range of high gray level for increasing a gradient in said range of high gray level, thereby obtaining a sharp contrast of said image is met where the red (1st seven segments) and green (1st seven segments) which are above

the gamma curve, utilize a higher gamma value (correction) and are increased between each segment (Fig 2).

2b. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matono et al., US 6,344,857 in view Takayama and applicant's admitted prior art (AAIPA).

In considering claim 4,

The combination of Matono and Takayama does not specifically disclose the brightness equation as claimed; wherein said gamma compensation process has been performed on said video signal received by said PDP in a following equation: brightness = k1 x (Vinput/Vmax)^γ, where $\gamma = 2.2$, k1 is a variable representing a gray level of a color television (TV), Vinput is input voltage, and Vmax is a maximum voltage for showing said maximum gray level of said color TV.

Matono/Takayama does disclose that it is conventional that a received video signal must be gamma corrected to cancel the gamma characteristic for the image transmitting side. It is also noted by the examiner that conventionally received NTSC signal include gamma characteristics of 2.2 (1/(2.2), whereas in European countries the image transmitting side include gamma characteristics of 2.8 (1/(2.8). Thus the use of 2.2 (which cancels the 1/(2.2) transmitted signal) is conventionally used in compensating for the received transmitted gamma 1/(2.2) signal.

Thus the examiner incorporates the applicant's admitted prior art, (page 1, line 16) which discloses the conventional brightness equation which is used to perform gamma correction on a video signal on the transmission side.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/utilize in Matono/Takayama, which discloses receiving a conventionally

gamma corrected video signal in order to perform further compensation/gamma correction on the video signal to cancel/account for the gamma characteristic of the image transmitting side in addition to correcting for the characteristic of the type of display (LCD, PDP or DMD), by using the conventional brightness equation where $\gamma = 2.2$ to cancel the effect of the conventional gamma characteristic on the image transmitting side.

In considering claim 5,

The claimed wherein a fourth gamma smaller than 2.2 is used in said anti compensation process with respect to said video signal in said range of low gray level is met where the blue segment has been gamma corrected using a gamma value smaller than the received signal, where the blue segment (segments 1-7) include multiple gamma values/slopes smaller than the received gamma compensated value (dashed line).

In considering claim 6,

The claimed wherein a fifth gamma equal to 2.2 is used in said anti compensation process with respect to said video signal in said range of intermediate gray level is met where the green segment (node 7-8) is gamma corrected utilizing a gamma value/slope as that of the received compensated signal (dashed line), the being corrected to a gamma equal to 2.2.

In considering claim 7,

The claimed wherein a sixth gamma larger than 2.2 is used in said anti compensation process with respect to said video signal in said range of high gray level is met where the red and green segments (both 1st seven segments) as shown in Fig 2 show multiple gamma values larger than the received gamma compensated value (dashed line).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure—see newly cited references on attached form PTO-892.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (571)272-7359. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (571)272-7352.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is

(703)305-HELP.

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BRIAN P. YENKE
Primary Examiner
Art Unit 2614

B.P.Y
13 May 2005